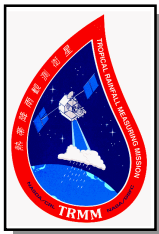


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# TRMM Monthly Status Briefing

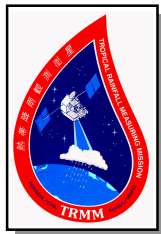
June 7, 2000



# FOT Overview

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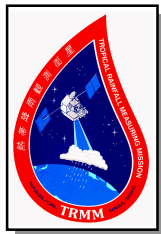
- Operations Status - Engineering Staff
  - Flight Ops Summary & Training - Andy Calloway (for Lou Kurzmillier)
  - ACS, C&DH - Andy Calloway (for Mark Fioravanti)
  - Electrical & Thermal - Andy Calloway
  - RCS, RF - Robert Bote
  - Power - Justin Knavel (for Mark Fioravanti)
  - CERES, VIRS - Andy Calloway (for Mark Fioravanti)
  - LIS, PR, & TMI - Andy Calloway
  - Ground System - Andy Calloway
  - Upcoming Activities - Andy Calloway



# Flight Operations Summary

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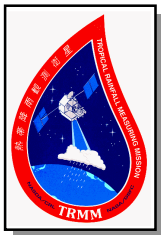
- Supported 540 SN events in May
  - 1 Yaw Maneuver
  - 9 Delta-V Maneuvers
- 5 Event Rpts & 5 Generic Late Acq Rpts generated (See Ground)
  - ER #174: WS crash
  - ER #175: VR3 Data Loss
  - ER #176: PTP2 Reset
  - ER #177: R/T event deleted for Shuttle
  - ER #178: Bad Q-Chnl lock due to MI



# Flight Operations Summary

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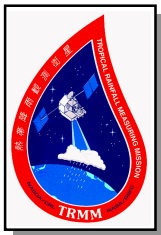
- Significant Milestones
  - MOC Power Reconfig complete: String 2 & b/u LTS, PTP to UPS-2
  - Solar Array Jitter Patch permanently installed in ACS EEPROM
  - TRMM achieves 900 days on orbit (15 May 2000)
- Staffing
  - Two additional members of FOT Engineering staff left
  - Retained services of two experienced engineers
  - One experienced console analyst arriving from CGRO/L7
  - Will accept at least one Bowie State summer intern for console analyst duties



# Training

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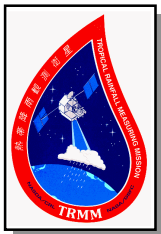
- Now fully staffed with Console Personnel
  - The four Shift Leads are fully certified for CA and SA positions
  - Two Console Analysts to complete SA requirements this month
  - The two new personnel are training for CA certification
- The two new engineers are studying TRMM spacecraft & operations for SA certification and specific subsystem knowledge for eventual Subsystem Lead responsibilities



# ACS Subsystem

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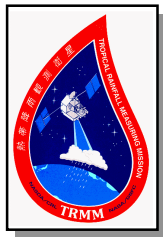
- Writing to EEPROM
  - EEPROM Commits
    - » Correction for Magnetic Field Epoch (CCR #005) still open
- ACS Flight Software bug (CCR #053) - low priority at CCB
- FDF analyzing whether MOI needs to be updated (WR #007)
- ESA counts becoming higher in Q3 when -X forward (Q3 points along velocity vector so seeing 'ram air' effects combined with solar max)
  - Will continue to monitor closely



# C&DH Subsystem

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- UTCF adjustment was not required this month
  - Current UTCF value remains 31535996.843867 sec
- Open Issues
  - Writing from RAM to EEPROM (CCR #034)
    - » New TSM table #21 and RTSs # 2, 3, 13, 14, and 15
    - » Planned for later this week or early next week
  - New on-board DS filter table to record ACE data (CCR #048)
  - No-clock software patch FSW activities moved to #1 priority at CCB (CCR #047)

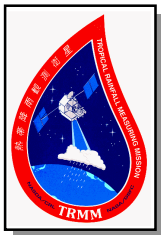


# Thermal / Electrical Subsystems

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- Thermal and Electrical subsystems remain nominal

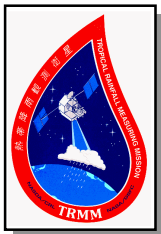




# RCS Subsystem

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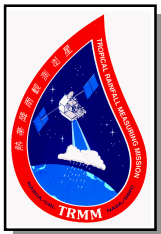
- RCS performed 9 successful Delta-V maneuvers (#190 - #198)
- EOL worst case is **September, 2003** given the following;
  - Current fuel remaining is 573.80 kg
  - Average Delta-V frequency of every 3 days
  - Average fuel use of 1.4 kg per Delta-V pair
  - Allowing 63 kg reserve fuel
    - 10 kg for attitude control below 270 km
    - 40 kg for re-entry
    - 13 kg residual in tanks & lines
- No Open RCS Anomaly or Event Reports
- Upcoming Events
  - None



# RF Subsystem

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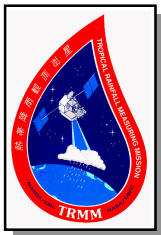
- 5 Generic Late Acquisitions (#56 - #60)
- 1 instance of Mutual Interference on 05/30/00 (ER #178)
- Frequency offset Transponder #1
  - Average = **674.65** Hz, Max = 725.81Hz, Min = 619.65 Hz
- Frequency offset Transponder #2
  - Average = **-819.66** Hz, Max = -930.67, Min = -676.49 Hz
- No open RF Anomaly or Event Reports
- Upcoming Events
  - Offset of transponder frequencies likely before end of year



# Power Subsystem

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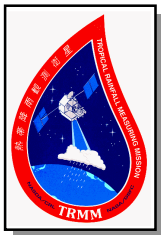
- PSIB auto-SPRU function (no trickle charge) remains disabled
  - Monitor system with Code 563 close to Beta  $\pm 58^\circ$
  - May re-enable auto-SPRU if actual C/D ratio reaches 1.07
- Disabled TSMs 31 & 32
  - 00-154 TSMs 31 & 32 were disabled, they will be re-enable when the State of Charge counters are reaching 100% at the end of day
  - These TSMs are designed to safeguard against PSIB misconfigurations, and are not used for normal power maintenance operations



# CERES Instrument

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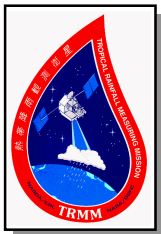
- Internal Calibrations were performed on 00-131 and 00-155
- Azimuth gimbal exercises performed
  - Operations in preparation for full Biax operations
  - Slowly widening Azimuth angles from 170° - 190° to 140° - 220°
- Microprocessor loads
  - 00-130, 00-137, & 00-153: Attempt to characterize and reduce the system noise
- Temperature Controllers
  - Total, Shortwave, and Longwave temperature controllers powered back on
  - Sensor Coefficients were adjusted to reduce the system noise
  - Total temperature controller was patched since the controller was not operating correctly



# CERES Instrument

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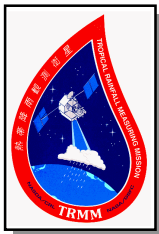
- Open Issues
  - Bridge Balance Resets were still occurring frequently in May until that latest patch (Anomaly #80)
  - Azimuth rotation stalls (Anomaly #79)
  - Continuous Biaxial operations planned
  - DR on MP ground system to incorporate new CERES requirements



# VIRS Instrument

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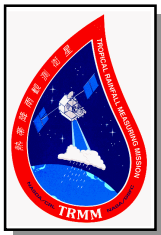
- 2 Solar Calibrations were performed on 00-137
- Blackbody temperature still being maintained between 9 °C and 16 °C



# LIS Instrument

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- Routine MSFC real-time command requests were performed on 00-132 and 00-151
- No open issues

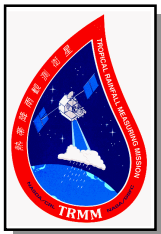


# TMI / PR Instruments

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- No concerns or open issues for TMI
- PR Open Issues
  - Frequency Agreement Renewal activities
    - » Meeting held on 00-117
    - » Joe Deskevich and Doug Boyd working to renew the international agreements

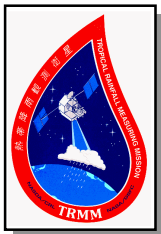




# Ground System

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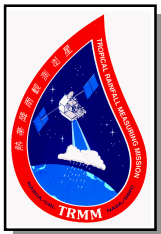
- MOC is now fully reconfigured for redundancy between UPS-2 and UPS-5
  - Awaiting final updated MOC configurations drawings
- FOT is now regularly attending B32-UWG meetings
- EPS-switch relocation still to be performed
- TPOCC System Managers (TSMs) will be working with FOT to resolve all Security Scan Report vulnerabilities
- Event Reports
  - #174: FEP-1 DC Card Overflow - Completed event on String-2
  - #175 VR-3 (LIS) Recorder Overflow - Analyst multi-tasking issue
  - #176 Late Acquisition (9+ minutes) - Required PTP reset
  - #177 Realtime Event Deleted for ISS support - Required new event
  - #178 MI caused bad Q-channel quality - All data captured next 2 events



# Upcoming Activities

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- 0-2 Months
  - Ensure FOT training remains top priority following recent attrition
  - Continue CERES preparations for Biaxial operations
  - Possibly reenale power system autospru by monitoring C/D level
  - Copy remaining RAM table changes to EEPROM
  - Dump ACS / SC EEPROM memory and update GRIs
  - System Software Release 8.1 implementation
  - Complete 1st draft of TRMM End of Life and Controlled Reentry Plan
  - Complete Final version of TRMM Continuous Risk Management Plan
  - Continue to close CCRs, MOCRs, ERs, ARs, and MSR Action Items



# Upcoming Activities

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- 2-3 Months
  - Emergency EPO Switch location transfers
  - Commence monthly FOT CRM meetings to mitigate identified risks
- 3-12 Months
  - Test, validate, and eventually accept new PACOR-A system
  - Commence DSN/GN FOT training
  - Testing of new PTP hardware and software deliveries
  - System Software Release 8.2 Delivery
  - Transponder Offset Activities